

What is claimed is:

1           1.     A filter comprising:  
2                 a filter element;  
3                 a core member in fluid communication with the filter element; and  
4                 a sleeve of a substantially fluid non-permeable material surrounding at least a  
5                 portion of one end of the filter element.

1           2.     A filter of claim 1 wherein the sleeve surrounds substantially all of the filter element  
2                 and has perforations through a portion of the sleeve with the perforations in the sleeve toward one  
3                 end of the filter element.

1           3.     A filter of claim 1 wherein the filter element is comprises a material selected from  
2                 pleated media and non-pleated media.

1           4.     A filter of claim 3 wherein the non-pleated media is selected from the group  
2                 comprising wrapped media, solid media and granular media.

1           5.     A filter element of claim 3 wherein the pleated media comprises a material selected  
2                 from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3                 paper, nylon, orlon, teflon and combinations thereof.

1           6.       A filter element of claim 4 wherein the wrapped media comprises a material selected  
2       from the group comprising spunbonded material, cloth, polypropylene, polyester and mixtures  
3       thereof.

1           7.       A filter element of claim 1 further comprising a rigid support surrounding the filter  
2       element inside the sleeve.

1           8.       A filter element of claim 1 wherein the rigid support further comprises a mesh.

1           9.       A filter element of claim 1 wherein the core member comprises a rigid perforated  
2       tube.

1           10.      A filter comprising:  
2               a housing with a fluid inlet and a fluid outlet;  
3               a filter element disposed within the housing;  
4               said filter element having a central core in fluid communication with the filter  
5               element;  
6               the fluid outlet of the housing in communication with the central core; and  
7               a sleeve of a substantially fluid non-permeable material surrounding at least a  
8               portion of one end of the filter element preventing fluid flow into the filter  
9               element.

1 11. A filter of claim 10 wherein the fluid inlet of the housing is towards the end of the  
2 filter surrounded by the sleeve.

1 12. A filter of claim 10 wherein the sleeve member surrounds substantially all of the filter  
2 element and has perforations through a portion of the sleeve with the perforations in the sleeve  
3 toward one end of the filter element and providing fluid communication to the filter element.

1 13. A filter of claim 10 further comprising a sleeve member which is joined to an end cap  
2 on which the filter element abuts and has a central cylindrical extension in fluid communication with  
the central core and has a seal member on the central cylindrical extension and is coupled to the  
outlet of the housing.

14. A filter of claim 13 wherein the seal member further comprises a gasket, said gasket  
configured to direct the fluid from the central core through the outlet of the housing.

1 15. A filter of claim 10 wherein the filter element comprises a material selected from  
2 pleated media and non-pleated media.

1 16. A filter of claim 15 wherein the non-pleated media is selected from the group  
2 comprising wrapped media, solid media and granular media.

1 17. A filter element of claim 16 wherein the pleated media comprises a material selected  
2 from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3 paper, nylon, orlon, teflon and combinations thereof.

1 18. A filter element of claim 16 wherein the wrapped media comprises a material selected  
2 from the group comprising spunbonded material, cloth, fiberglass, polypropylene, polyester and  
3 mixtures thereof.

1 19. A filter element of claim 10 further comprising a rigid support surrounding the filter  
element inside the sleeve.

20. A filter element of claim 19 wherein the rigid support further comprises a mesh.

21. A filter element of claim 10 wherein the central core comprises a rigid perforated  
tube.

1 22. A filter comprising:  
2 a cylindrical filter element of pleated filter media;  
3 a perforated central core extending through and surrounded by the pleated filter  
4 media;  
5 a sleeve of substantially fluid non-permeable material surrounding the outside of the  
6 pleated filter media;

1 the sleeve having perforations through one of the top and the bottom of the sleeve  
2 capable of providing fluid communication to the filter element;  
3 a circular top end cap covering and securing the sleeve, the top of the filter element  
4 and the core; and  
5 a circular bottom end cap with a central cylindrical extension in fluid communication  
6 with the central core, said bottom cap securing and covering the sleeve and  
7 the bottom of the filter element.

1 23. A filter of claim 22 further comprising a seal member on the central cylindrical  
extension of the bottom end cap adaptable to be received in a filter housing to provide a substantially  
leak-proof connection.

24. A filter comprising:  
a filter element;  
a core member in the filter element extending a partial length of the filter element  
from one end of the filter element; and  
said core member composed of a substantially fluid non-permeable material.

1 25. A filter of claim 24 wherein the core member extends substantially the length of the  
2 filter and has fluid communication to the core member toward one end of the filter element.

1           26.    A filter of claim 24 wherein the filter element comprises a material selected from  
2           pleated media and non-pleated media.

1           27.    A filter of claim 26 wherein the non-pleated media is selected from the group  
2           comprising wrapped media, solid media and granular media.

1           28.    A filter element of claim 26 wherein the pleated media comprises a material selected  
2           from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3           paper, nylon, orlon, teflon and combinations thereof.

            29.    A filter element of claim 27 wherein the wrapped media comprises a material selected  
            from the group comprising spunbonded material and cloth.

            30.    A filter element of claim 24 further comprising a rigid support surrounding the filter  
            element which allows for fluid flow into the filter element.

1           31.    A filter element of claim 30 wherein the rigid support further comprises a mesh.

1           32.    A filter element of claim 24 wherein the core member comprises a rigid member.

1           33.    A filter element of claim 32 wherein the central core is a rigid perforated cylindrical  
2           member.

34. A filter comprising:

- a housing with a fluid inlet;
- a filter element disposed within the housing;
- said filter element having a central core with a fluid non-permeable portion toward one end of the filter and the central core in fluid communication with the filter element on the other end of the filter;
- said housing having a fluid inlet in communication with the central core; and
- said housing having a fluid outlet.

35. A filter of claim 34 wherein the central core extends the length of the filter and has perforations through a portion of the central core toward one end of the filter element.

36. A filter of claim 34 wherein the central core is joined to an end cap on which the filter element abuts and which end cap has a central cylindrical extension in fluid communication with the central core and has a seal member on the outside of the central cylindrical extension which is coupled to the inside of the inlet of the housing.

37. A filter of claim 36 wherein the seal member further comprises a gasket, said gasket configured to direct the fluid into the filter element.

38. A filter of claim 34 wherein the filter element comprises a material selected from pleated media and non-pleated media.

1           39.    A filter of claim 38 wherein the non-pleated media is selected from the group  
2           comprising wrapped media, solid media and granular media.

1           40.    A filter element of claim 38 wherein the pleated media comprises a material selected  
2           from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3           paper, nylon, orlon, teflon and combinations thereof.

1           41.    A filter element of claim 39 wherein the wrapped media comprises a material selected  
2           from the group comprising spunbonded media and cloth.

1           42.    A filter element of claim 34 further comprising a rigid support surrounding the filter  
2           element.

1           43.    A filter element of claim 42 wherein the rigid support comprises a mesh.

1           44.    A filter element of claim 34 further comprising a top cap which covers the top of the  
2           central core.

1           45.    A method of filter fluids comprising the steps of:  
2           flowing at least two fluids into a housing;  
3           passing the fluids around a filter element partially surrounded by an a non-permeable  
4           barrier at the lower end of the filter element;



1 allowing the fluids to separate by gravity so that the lighter fluid can flow above the  
2 sleeve in the housing above the barrier;  
3 further passing the lighter fluid through a filter media;  
4 collecting the lighter fluid after passing through the filter element; and  
5 collecting the heavier fluid in the housing.

1 46. A method of filtering fluids of claim 45 wherein the fluid mixture contains solids and  
2 additionally filtering the solids by the filter element.

47. A method of filter fluids comprising the steps of:  
flowing at least two fluids into a housing;  
passing the fluids around a filter element partially surrounded by an a non-permeable  
barrier at the upper end of the filter element;  
allowing the fluids to separate by gravity so that the lighter fluid can flow above the  
sleeve in the housing adjacent to the barrier  
further passing the heavier fluid through a filter media;  
8 collecting the heavier fluid after passing through the filter element; and  
9 collecting the lighter fluid in the housing.

1 48. A method of filtering fluids of claim 47 wherein the fluid mixture contains solids and  
2 additionally filtering the solids by the filter element.